REMARKS

In accordance with the foregoing, the claims have not been amended. Claims 1-26 are pending, with claims 1-17 and 20-26 being under consideration.

ENTRY OF RESPONSE UNDER 37 C.F.R. §1.116

Applicants request entry of this Request for Reconsideration at least because the references applied to the claims are newly cited in the final Office Action, and Applicants should be provided the opportunity to present patentability arguments and amendments in view thereof.

REJECTION UNDER 35 U.S.C. §103

Claims 1-10, 12-17 and 21-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over George, II et al. (George), U.S. Patent No. 4,777,416 in view of Kim, U.S. Patent No. 6,308,114; and claims 11 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over George in view of Kim and further in view of Jacobs, U.S. Patent No. 6,580,246. These rejections are respectfully traversed.

George discusses a recharge docking system for a battery-powered mobile robot which navigates from node to node. George describes a means for sensing when the battery charge is below a predetermined level and halting the travel of the robot at the next navigational node when the battery voltage is sensed to be below that predetermined level. Further, George describes a means for independently determining a path from the next node to a base node where the robot's battery can be charged. See, George, col. 1, line 61 – col. 2, line 2.

The robot in George is described as traveling by way of moving towards successive goal nodes predefined in a map. See George, col. 7, line 47 – col. 8, line 5. Accordingly, the robot in George determines a path to a base node after it has arrived at the next node in its predetermined node map. In addition to the node map, George describes using beacons, one or more of which are mounted on the walls in the space to be protected by the robot to assist in locating an directing the robot in the area in which it is to roam. See col. 4, lines 16-19.

As only an example, the present Application relates to "a method and apparatus for automatically allowing a mobile robot, which autonomously travels a predetermined space, to return to a docking station or a designated location when a predetermined job is completed." Application, para. [0002], lines 1-4.

As a further example, the present Application describes a "distance calculator" which "calculates a difference Δt between the first time and the second time and then calculates a

distance L between the docking station 210 and the mobile robot 220 using this difference Δt." See para. [0025] of present Application.

Claim 1 at least recites:

> determining whether the mobile robot approaches or moves away from the designated location, at a third location arrived at after the mobile robot rotates by the first direction angle and then travels a second distance; and

The Office Action cites to FIGS. 5 ,7, 9, 10, 13 and col. 6 line 30 - col. 7 line 15, col. 9 line 10 - col. 11 line 5, col. 11 line 60 - col. 12 line 65, as describing or suggesting the above feature of claim 1. In the Response to Arguments section, the Office Action states that George describes continuous angle measurement data along with sensor data between the robot and the base station using geometry.

However, George merely describes the calculation of angles and distances from the beacons, described above as being mounted in the wall in the space to be protected by the robot, and is *silent regarding any angle or distance calculations between the robot and the base node/recharge station*.

As a beacon is described in George as being located in the wall and being used for directing the robot within a particular area, Applicants submit that a person of ordinary skill in the art would not equate the beacons described in George with the base node/recharge station of George. Again, Applicants are unable to find in the cited passages of George a discussion or suggestion setting forth such a claimed "determining whether the mobile robot approaches or moves away from the designated location."

The absence of angle and distance calculations between the robot and base node/recharge station of George is expected since, in George, it would not be necessary to make such calculations.

The robot of George merely moves from node to node along the path between the nodes, pre-defined in the map, until it reaches the base node/recharge station. The beacons of George, described in the passages cited by the Office Action, are merely used in an obstacle avoidance system in case obstacles appear in the way of the path pre-defined in the map. However, as previously described, the beacons cannot meet the claimed "designated location," and thus, calculations of angles and distances between the robot and the beacons of George cannot be equated to "determining whether the mobile robot approaches or moves away from the designated location," as claimed.

Further, George describes in detail in col. 15, lines 26 to 41 the way in which the robot in George navigates back to the base node/recharge station during a time when the battery charge is determined to be low. Here, George states that a planner calculates a return path by considering the current node as the start node, and computes the shortest path from the current node to the goal node for each node in the goal list using a graph search algorithm such as Dijkstra's algorithm. Thus, travel of the robot in George to the base node/recharge station is performed node to node according to the predetermined list of nodes and angles between these notes noted in the map. Applicants further submit that in view of this additional description in George, that a person of ordinary skill in the art would not understand George to describe or suggest the features of claim 1.

Moreover, Applicants respectfully submit that the secondary reference of Kim fails to cure the abovementioned deficiency of George, as Kim describes robot movement via sound-direction using angles between sound receivers and one sound source, and not direction angles of the robot with respect to a first and second location.

Therefore, Applicants also respectfully submit that neither George nor Kim, whether considered alone or in combination, teach or describe at least the abovementioned features of claim 1.

Thus, in view of the above, Applicants respectfully submit that claim 1 and claims 2-10 and 12 which depend therefrom, patentably distinguish over the cited art.

Independent claims 13 and 26 at least recite similar features, with differing scope and breadth, and thus in view of the above reasons, Applicants respectfully submit that claims 13 and 26 and claims 14-17 and 21-25 which depend from claim 13 patentably distinguish over the prior art.

Favorable reconsideration and a withdrawal of the rejection against claims 1-10, 12-17 and 21-26 are respectfully requested.

Regarding the rejection of claims 11 and 20, Applicants respectfully submit that Jacobs similarly fails to cure the abovementioned deficiency of George, as Jacobs describes a robot touch shield device, and the movement path of the robot of Jacobs also does not teach or suggest at least the claimed feature described above with respect to independent claims 1, 13 and 26.

Favorable reconsideration and withdrawal of the rejection against claims 11 and 20 are thus respectfully requested.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 9/9/2009

By: Michelle M Koeth

Michelle M. Koeth
Registration No. 60,707

1201 New York Avenue, N.W., 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501